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BOARD DIPLOMA EXAMINATION, (C-20)
NOVEMBER/DECEMBER—2022

DECE – FOURTH SEMESTER EXAMINATION

ELECTRONIC CIRCUITS – II

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Classify clippers.
2. List any three applications of clippers.
3. Define slew rate and CMRR.
4. List the characteristics of ideal operational amplifier.
5. List the advantages of integrated circuits over discrete circuits.
6. State the use of sweep voltage as time base.
7. Draw the pin diagram of 555 IC timer.
8. Define lock range of PLL.
9. Define the term resolution of D/A converter.
10. Define the term settling time of D/A converter.

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PART—B

8×5=40

- Instructions :** (1) Answer either (a) **or** (b) from each question.
(2) Each question carries **eight** marks.
(3) Answers should be comprehensive and criteria for valuation are the content but not the length of the answer.

11. (a) Explain the working of Zener diode clipper with waveforms.

(OR)

(b) Explain the working of unbiased negative diode clipper circuits.

12. (a) Explain the operation of Non-Inverting amplifier using Op-Amp and derive the expression for voltage gain.

(OR)

(b) Draw the functional block diagram of an operational amplifier and explain its operation.

13. (a) Explain the working of Op-Amp based Schmitt trigger circuit with waveforms.

(OR)

(b) Explain with suitable circuit diagram the operation of RC phase shift oscillator using Op-Amp.

14. (a) Explain with suitable circuit diagram the working of astable multivibrator using 555 IC.

(OR)

(b) Draw the internal block diagram of PLL – LM 565 and explain its operation.

15. (a) Explain the D/A converter using R-2R ladder network.

(OR)

(b) Explain the A/D conversion using counter method.

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[Contd...

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PART—C

10×1=10

- Instructions :** (1) Answer the following question.
(2) The question carries **ten** marks.
(3) Answer should be comprehensive and criterion for valuation is the content but not the length of the answer.

16. Prove that frequency of circuits using Op-Amp is dependent only on the components connected externally.

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